

Claims 1-3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lofquist (USP 5,478,624). Applicant respectfully traverses this rejection for the following reasons.

Claims 1-3 of the present invention are limited to plied yarns formed by twisting two or more ring spun or wrap spun yarns. The ring spun or wrap spun yarns are formed by ring spinning or wrap spinning a fiber bundle with a second fiber comprising a heat-activated binder material. The ring spinning or wrap spinning places the heat-activated binder fibers uniformly and continuously around the base fibers during twist insertion or wrapping to form the spun yarn. Since the heat-activated binder fibers are twisted or wrapped in a uniform, continuous spiral around the base fibers during yarn forming, the base fibers along with heat-activated binder fibers are uniformly held in place along the yarn length. These yarns are then plied, followed by a heating step. The resulting plied yarn has less thick and thin irregularities along the length, and the intersecting "touch points" of heat activated binder fibers and base fibers are uniformly distributed around the spun yarns and between the plied yarn ends.

Lofquist teaches a commingled yarn — a heat activated binder fiber is commingled intermittently at discontinuous points within and along the length of the base fibers. This commingled yarn is then subjected to heat to melt the binder material. The intermittence of the commingling therefore precludes the heat-activated fibers from being placed uniformly and continuously around the base fibers during yarn forming.

When the plied yarn of the present invention is twistset, the uniform, continuous spiral distribution of heat-activated binder fibers to intersecting "touch points" of base fibers around the spun yarns results in a continuous durable bond around the spun yarns and between the plied yarn ends. The unexpected benefits are uniform yarn bulk development and regularity, greater twist retention, greater yarn rigidity and resilience, and significantly less yarn hairiness.

The Examiner readily acknowledges that Lofquist fails to teach or disclose ring spinning or wrap spinning the base fiber bundle with a second, binder material-containing fiber to form a yarn characterized by the second fiber being twisted or wrapped uniformly around the base fiber bundle. And

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although ring spinning and wrap spinning are known yarn-forming methods, there is nothing in Lofquist to even hint at Applicant's unique process of plying these materials after the binder material/fiber has been wrapped around the other fiber, followed by heating.

For these reasons, claims 1-3 are submitted to be patentable over the art of record. Accordingly, Applicant requests an early and favorable response. In the event there are yet unresolved issues, the Examiner is cordially invited to contact the undersigned patent attorney.

Respectfully submitted,

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I hereby certify that this correspondence is facsimile transmitted to Group Art Unit 1733 Examiner Sam Chuan Yao, 703-305-7718, on August 22, 2000.

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